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EXAMINER	
MARTIN, LAURA E	

ART UNIT	PAPER NUMBER
2853	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/827,030	TORGERSON ET AL.	
	Examiner	Art Unit	
	LAURA E. MARTIN	2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 January 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-22,24-50,56 and 57* is/are pending in the application.

4a) Of the above claim(s) *3,5,32,34-42 and 45-50* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4,6-22,24,31,33,43,44,56 and 57* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 22 and 24-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Cleland et al. (US 6491377 B1).

Cleland et al. disclose the following claim limitations:

As per claim 22: a substrate (figures 3 and 4, element 313, a first fluid feed slot formed in the substrate and having a first fluid feed slot edge (figure 11B, element 1101), first vaporization chambers fluidically coupled to the first fluid feed slot via a fluid path (figures 3 and 4, element 301), first nozzle openings each communicated with a respective one of the first vaporization chambers (figures 3 and 4, element 303), a reference conductor formed on the substrate and disposed between adjacent ones of the first vaporization chambers as communicated with respective ones of the first nozzle openings and under the fluid path in an area between the first vaporization chambers and the first fluid feed slot edge (figure 4, elements 415 and 417 and figure 5), and an isolation structure configured to isolate the reference conductor from flowing over the first fluid feed slot to the vaporization chambers (figure 4, elements 419 and 421).

As per claim 24: the reference conductor is disposed along opposing sides of the first fluid feed slot (figure 4, elements 415 and 417, figure 5).

As per claim 25, the first vaporization chambers (column 1, line 61-column 2, line 5) are disposed along opposing sides of the first fluid feed slot (figure 13A, CYAN, 9-12) and the reference conductor (figure 4, elements 415 and 417) is disposed between the first vaporization chambers and the first fluid feed source edge along one of the opposing sides of the first fluid feed source and the first vaporization chambers and a second fluid feed source edge along another one of the opposing sides of the first fluid feed slot (figures 4 and 5.

As per claim 26, fluid paths, wherein each of the fluid paths is fluidically coupled to the first fluid feed slot and a corresponding one of the first vaporization chambers (column 12, lines 54-62) and the reference conductor is isolated from fluid flowing through the fluid paths by the isolation structure (figure 4, elements 419 and 421).

As per claim 27, a second fluid feed slot having a second fluid feed slot edge; and second vaporization chambers fluidically coupled to the second fluid feed source (figure 13A, element MAGENTA, 9-16), wherein the reference conductor is disposed under the second fluid path in an area between the second vaporization chambers and the second fluid feed slot edge (figure 4, elements 415 and 417 and figure 5), and wherein the isolation structure is configured to isolate the reference conductor from fluid flowing over the second fluid feed slot edge to the second vaporization chambers (figure 4, elements 419 and 421).

As per claim 28: the reference conductor is disposed between at least two of the vaporization chambers (elements 415 and 417 are to the sides of the vaporization chamber 301 - in figure 5, there are multiple chambers in a row, therefore, the conductors would be between two vaporization chambers).

As per claim 29, the second vaporization chambers are disposed along opposing sides of the second fluid feed slot (figure 13A, elements MAGENTA 17-20) and the reference conductor (figure 4, elements 415 and 417) is disposed between the second vaporization chamber and the second fluid feed slot edge along one of the opposing sides of the second fluid feed slot (figures 4, 5, and 11A) and the second vaporization chambers and a third fluid feed slot edge along another one of the opposing sides of the fluid feed slot (figures 4, 5, and 11A).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 4, 8-19, 21, 30, 43, 44, 56, and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cleland et al. (US 6491377 B1) in view of Bhaskar et al. (US 5808640 A).

Cleland et al. disclose the following claim limitations:

As per claim 1: a substrate (figures 3 and 4, element 313); a first fluid feed slot formed in the substrate and having a first fluid feed slot edge (figure 11B, element 1101); first firing resistors (figures 3 and 4, element 309) disposed along the first fluid feed slot and first nozzle openings (figures 3 and 4, element 303) each associated with one of the first firing resistors, wherein the first firing resistors (primitives) are configured to respond to a first current to heat fluid provided by the first fluid feed slot (figure 8B I_{in}/I_{out}; column 15, line 64 - column 16, line 23) via a fluid path and eject the fluid from the associated one of the first nozzle openings; and a reference conductor (figure 8A, element 811 – conductive film) formed on the substrate and configured to conduct the first current (figure 8C, element I_1) from the first firing resistors, wherein the reference conductors disposed between adjacent ones of the first firing resistors (figure 8A, elements 811, 801, and 803) as associated with respective ones of the first nozzle openings (figure 3, elements 303 and 309) and under the fluid path.

As per claim 4: firing resistor areas disposed along the first fluid feed slot and including conductive leads (figure 3, element 309) extending to and from the first firing resistors, wherein the reference conductor is further disposed between the conductive leads of adjacent firing resistor areas (figure 8B).

As per claim 8: the reference conductor is disposed along the entire length of the first fluid feed slot (figure4, element 309 – 307 is narrower than 309).

As per claim 9: the reference conductor is disposed along opposing sides of the first fluid feed slot and along the entire length of the opposing sides of the first fluid feed slot (figure 4, element 309 – 307 is narrower than 309).

As per claim 10: the first firing resistors are disposed along opposing sides of the first fluid feed slot (figure 13A, element 9-10 MAGENTA) and the reference conductor (figure 11C, element 1111) is disposed between the first firing resistors and the first fluid feed slot edge along one of the opposing sides of the first fluid feed slot and the first firing resistors and a second fluid feed slot edge along another one of the opposing sides of the first fluid feed slot.

As per claim 11: second firing resistors disposed along the first fluid feed slot and configured to respond to a second current to heat fluid (column 15, line 64 – column 16, line 23) provided by the first fluid feed slot (figure 13A, elements 13-14, MAGENTA), wherein the reference conductor is configured to conduct the second current from the second firing resistors.

As per claim 12: the second firing resistors are disposed on opposing sides of the first fluid feed slot (figure 13A, elements 13-14) and the reference conductor is disposed between the second firing resistors (figure 8B, element 309) along one of the opposing sides of the first fluid feed slot and the second firing resistors and a second fluid feed slot edge along another one of the opposing sides of the first fluid feed slot (figure 5).

As per claim 13: a second fluid feed slot and third firing resistors disposed along the second fluid feed slot (figure 13A, element CYAN 17-20) and configured to respond to a third current to heat fluid provided by the second fluid feed slot, wherein the reference conductor is configured to conduct the third current from the third firing resistors (column 15, line 64 – column 16, line 23).

As per claim 14: the third firing resistors are disposed on opposing sides of the second fluid feed slot and the reference conductor is disposed between the third firing resistors (figure 13A, element CYAN 17-20)

As per claim 15: fourth firing resistors disposed along the second fluid feed slot (figure 13A, element 21-24 CYAN) and configured to respond to a fourth current to heat fluid provided by the second fluid feed slot (column 15, line 64 – column 16, line 23), wherein the reference conductor is configured to conduct the fourth current from the fourth firing resistors.

As per claim 16: the fourth firing resistors are disposed on opposing sides of the second fluid feed slot (figure 13A, element CYAN).

As per claim 17: fifth firing resistors, wherein a first portion of the fifth firing resistors are disposed along the first fluid feed slot (figure 13A, MAGENTA 15 and 16) and configured to respond to a first current to heat fluid provided by the first fluid feed slot (column 15, line 64—column 16, line 23) and a second portion of the fifth firing resistors are disposed along the second fluid feed slot and configured to respond to the fifth current to heat fluid provided by the second fluid feed slot (column 15, line 64—column 16, line 23) and the reference conductor is configured to conduct the current from the firing resistors.

As per claim 18: sixth firing resistors, wherein a first portion of the sixth firing resistors are disposed along the first fluid feed slot (figure 13A, element MAGENTA 9-10) and configured to respond to a sixth current to heat fluid provided by the first fluid feed slot (column 15, line 645 – column 16, line 23) and a second portion of the sixth

luring resistors are disposed along the second fluid feed slot and configured to respond to the sixth current to heat fluid provided by the second fluid feed slot (column 15, line 645 – column 16, line 23), wherein the reference conductor is configured to conduct the sixth current from the sixth firing resistors.

As per claim 19: a second fluid feed slot having a second fluid food slot edge (figure 13A, element CYAN) and second firing resistors, wherein a first portion of the second firing resistors (figure 13, elements 13-16) are disposed along the first fluid feed slot and configured to respond to a second current to heat fluid provided by the first fluid feed slot and a second portion of the second firing resistors are disposed along the second fluid feed slot and configured to respond to the second current to heat fluid provided by the second fluid feed slot (column 15, line 645 – column 16, line 23), wherein the reference conductor is configured to conduct the second current from the second firing resistors.

As per claim 21: vaporization chambers (figures 3 and 4, element 301) fluidically coupled to the first fluid feed slot (figure 5).

As per claim 30: firing resistors, wherein each of the firing resistors is disposed in a corresponding one of the first vaporization chambers (figure 3, element 309) and configured to respond to a current to heat fluid provided by the first fluid feed slot.

As per claim 43: receiving fluid via a fluid feed path (figure 3, element 307) at first firing resistors (figure 3, element 309) disposed along a first fluid feed slot (figure 11B, element 1101 and figure 5) along a substrate, the first fluid feed slot having a first fluid feed slot edge and the fluid feed path extending between the first fluid feed slot edge

and the first firing resistors (figure 3); receiving a first current at the first firing resistors (column 1, line 61-column 2, line 5); heating the fluid received from the first fluid feed slot in response to receiving the first current at the first firing resistors and ejecting the fluid from respective first nozzle openings each associated with one of the first firing resistors (column1, line 61-column 2, line 5); receiving the first current from the first firing resistors at a reference conductor formed on the substrate adjacent to ones of the first firing resistors (figure 8B, elements 811, 801, and 803) as associated with respective ones of the first nozzle openings; and conducting part of the first current through the reference conductor as disposed between the adjacent ones of the first firing resistors (figure 8B, I_{in} and I_{out}).

As per claim 44: first firing resistor areas including conductive leads extending to and from the first firing resistors (figure 8B, elements 805 and 815); and conducting a second part of the first current though the reference conductor as disposed between the conductive leads of adjacent first firing resistor areas (figure 8B, elements 821 and 823).

As per claim 56: a substrate (figure 3, element 313); a fluid feed slot formed in the substrate (figure 11B, element 1101 and figure 5); vaporization chambers fluidically coupled to the fluid feed slot via a fluid feed path (figure 3, element 301); nozzle openings each communicated with a respective one of the vaporization chambers (figure 3, element 303); firing resistors disposed in the vaporization chambers (figure 3, element 309 and figure 8B, elements 801 and 803); conductive leads extending to and from the firing resistors (figure 8B, elements 805 and 815); and a reference conductor disposed between adjacent ones of the firing resistors as communicated with respective

ones of the nozzle openings (figure 8B, element 811), between the conductive leads of the adjacent ones of the firing resistors (figure 8B, elements 801 and 803).

Cleland et al. do not disclose the following claim limitations:

As per claim 1: the reference conductor is disposed between adjacent ones of the firing resistors as associated with the respective ones of the nozzle openings and under the fluid path in an area between the fluid feed slot edge and the firing resistors.

As per claim 12: the reference conductor is disposed between the firing resistors and the fluid feed slot edge.

As per claim 13: the reference conductor is disposed between the firing resistors and a fluid feed slot edge along the fluid feed slot.

As per claim 14: the reference conductor is disposed between the firing resistors and the fluid feed slot edge along one of the opposing sides of the fluid feed slot and the firing resistors and a fluid feed slot edge along another one of the opposing sides of the fluid feed slot.

As per claim 15: the reference conductor is disposed between the fluid feed slot edge and the firing resistors.

As per claim 16: the reference conductor is disposed between the firing resistors and the fluid feed slot edge along one of the opposing sides of the fluid feed slot and the firing resistor.

As per claim 17: the reference conductor is configured to conduct the current from the firing resistors and is disposed between the fluid feed slot edge and the portion

of the firing resistors and between the fluid feed slot edge and the portion of the other firing resistors.

As per claim 18: the conductor disposed between the fluid feed slot edge and the portion of the firing resistors and between the fluid feed slot edge and the portion of the other firing resistors.

As per claim 19: the reference conductor is disposed between the first fluid feed slot edge and the portion of the firing resistors and between the fluid feed slot edge and the portion of the other firing resistors.

As per claim 21: an isolation layer configured to isolate the reference conductor from fluid flowing from the fluid feed slot to the vaporization chambers, wherein the reference conductor is disposed between adjacent vaporization chambers and between the vaporization chambers and the first fluid feed slot.

As per claim 30: the reference conductor is configured to conduct the current from the firing resistors.

As per claim 43: the reference conductor is disposed between adjacent ones of the firing resistors as associated with the respective ones of the nozzle openings and under the fluid path in an area between the fluid feed slot edge and the firing resistors.

As per claim 56: the reference conductor is disposed between adjacent ones of the firing resistors as associated with the respective ones of the nozzle openings and under the fluid path in an area between the fluid feed slot edge and the firing resistors.

As per claim 57: an isolation structure configured to isolate the reference conductor from fluid flowing through the fluid path.

Bhaskar et al. disclose the following claim limitations:

As per claim 1: the reference conductor is disposed between adjacent ones of the first firing resistors as associated with the respective ones of the first nozzle openings and under the fluid path in an area between the first fluid feed slot edge and the first firing resistors (figure 5, elements 74, 28, 64, 66, 68, and 70).

As per claim 12: the reference conductor is disposed between the firing resistors and the fluid feed slot edge (figure 5, elements 74, 28, 64, 66, 68, and 70).

As per claim 13: the reference conductor is disposed between the firing resistors and a fluid feed slot edge along the fluid feed slot (figure 5, elements 74, 28, 64, 66, 68, and 70).

As per claim 14: the reference conductor is disposed between the firing resistors and the fluid feed slot edge along one of the opposing sides of the fluid feed slot and the firing resistors and a fluid feed slot edge along another one of the opposing sides of the fluid feed slot (figure 5, elements 74, 28, 64, 66, 68, and 70).

As per claim 15: the reference conductor is disposed between the fluid feed slot edge and the firing resistors (figure 5, elements 74, 28, 64, 66, 68, and 70).

As per claim 16: the reference conductor is disposed between the firing resistors and the fluid feed slot edge along one of the opposing sides of the fluid feed slot and the firing resistor and a fluid feed slot edge along another one of the opposing sides of the fluid feed slot (figure 5, elements 74, 28, 64, 66, 68, and 70).

As per claim 17: the reference conductor is configured to conduct the current from the firing resistors and is disposed between the first fluid feed slot edge and the

portion of the first firing resistors and between the fluid feed slot edge and the portion of the firing resistors (figure 5, elements 74, 28, 64, 66, 68, and 70).

As per claim 18: the conductor disposed between the fluid feed slot edge and the portion of the firing resistors and between the fluid feed slot edge and the portion of the other firing resistors (figure 5, elements 74, 28, 64, 66, 68, and 70).

As per claim 19: the reference conductor is disposed between the fluid feed slot edge and the portion of the firing resistors and between the fluid feed slot edge and the portion of the other firing resistors (figure 5, elements 74, 28, 64, 66, 68, and 70).
As per claim 43: the reference conductor is disposed between adjacent ones of the firing resistors as associated with the respective ones of the nozzle openings and under the fluid path in an area between the fluid feed slot edge and the firing resistors (figure 5, elements 74, 28, 64, 66, 68, and 70).

As per claim 21: an isolation layer configured to isolate the reference conductor from fluid flowing from the fluid feed slot to the vaporization chambers, wherein the reference conductor is disposed between adjacent vaporization chambers and between the vaporization chambers and the first fluid feed slot (column 5, lines 5-14).

As per claim 30: the reference conductor is configured to conduct the current from the firing resistors (column 5, lines 28-43).

As per claim 56: the reference conductor is disposed between adjacent ones of the firing resistors as associated with the respective ones of the nozzle openings and under the fluid path in an area between the fluid feed slot edge and the firing resistors(figure 5, elements 74, 28, 64, 66, 68, and 70).

As per claim 57: an isolation structure configured to isolate the reference conductor from fluid flowing through the fluid path (column 5, lines 5-14).
It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the apparatuses and methods taught by Cleland et al. with the disclosure of Bhaskar et la. in order to provide smaller printhead geometries without altering the conductor/heater resistor impedance ratio.

Claims 6, 7, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cleland et al. (US 6491377 B1) and Bhaskar et al. (US 5808640 A), and further in view of Maze et al. (US 2001/0008411 A1).

Cleland et al. as modified disclose the following claim limitations:

The ejection device of claims 1 and 30.

Cleland et al. as modified do not disclose the following claim limitations:

As per claim 6: each of the drive switches is electrically connected to a corresponding first firing resistor of the first firing resistors and the reference conductor.

As per claim 7: each of the drive switches is a field effect transistor that is electrically connected between a corresponding first firing resistor and the reference conductor.

As per claim 31: each of the drive switches is electrically coupled to one of the firing resistors and the reference conductor.

Maze et al. disclose the following claim limitations:

As per claim 6: each of the drive switches is electrically connected to a corresponding first firing resistor of the first firing resistors and the reference conductor [0030]-[0032] and (figure 4, elements 401 and 403).

As per claim 7: each of the drive switches is a field effect transistor that is electrically connected between a corresponding first firing resistor and the reference conductor [0029]-[0032] and (figure 4, element 403).

As per claim 31: each of the drive switches is electrically coupled to one of the firing resistors and the reference conductor [0030]-[0032] and (figure 4, elements 401 and 403).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the fluid ejection devices taught by Cleland et al. as modified with the disclosure of Maze et al. in order to provide a consistent printhead temperature and a constant droplet volume.

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable Cleland et al. (US 6491377 B1) and Bhaskar et al. (US 5808640 A), and further in view of Chen et al. (US 20020135640).

Cleland et al. disclose the following claim limitations:

The device of claim 1.

Cleland et al. as modified do not disclose the following claim limitations:

The reference conductor comprises a conductive layer and a resistive layer.

Chen et al. do not disclose the following claim limitations:

The reference conductor comprises a conductive layer and a resistive layer [0024].

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the fluid ejection device of Cleland et al. as modified with the disclosure of Chen et al. in order to create a higher quality printer.

Response to Arguments

Applicant's arguments filed 1/22/08 have been fully considered but they are not persuasive.

Applicant argues that Cleland does not disclose a reference conductor between the ink feed slot and the firing resistor areas; however, Bhaskar remedies this.

Applicant argues that Cleland does not disclose a reference conductor that conduct a first current from first firing resistors wherein the reference conductor is disposed between first firing resistors. In figure 8B of Cleland, conductor 811 sits between resistors 801 and 803 and conducts currents 821 and 823. A reference conductor formed on a substrate and disposed between adjacent ones of first vaporization chambers as communicated with ones of the first respective nozzle openings and under a fluid path in an area between the first vaporization chamber and a first fluid feed slot is taught by both Cleland (for claim 22) and Bhaskar. The reference conductor has not been defined, and in claim 22, elements 415 and 417 in figure 4 are considered the reference conductors. In Bhaskar, figure 5, elements 64, 66, 68, and 70 are fabricated of a conductive layer as shown in figure 3, element 42 (column 5, lines 5-

14). This is below the fluid path between the fluid feed slot and the vaporization chambers.

Applicant argues that there is no reference teaching a reference conductor disposed between adjacent ones of firing resistors as communicated with respective ones of nozzle openings between conductive leads of the adjacent ones of firing resistors and under a fluid path in an area between an edge of a fluid feed slot and vaporization cambers. The reference conductor (figure 8B, element 811) disposed between adjacent ones of firing resistors (figure 8B, elements 801 and 803) as communicated with respective ones of conductive leads (figure 8B, elements 805 and 811) of adjacent ones of firing resistors is taught by Cleland. As stated above, Bhaskar discloses firing resistors and under a fluid path in an area between an edge of a fluid feed slot and vaporization cambers.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAURA E. MARTIN whose telephone number is (571)272-2160. The examiner can normally be reached on Monday - Friday, 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/L. E. M./

Laura E. Martin

/Manish S. Shah/
Primary Examiner, Art Unit 2853